Amendments to the Claims:

Please amend Claims 1-26 as follows:

1. (currently amended) An electric motor movement controlling method, the electric motor being fed by a total voltage ~~(VT)~~ proportional to an alternate network voltage ~~(V_{AC})~~, the method ~~being characterized by~~ comprising the steps of:

- making a first measurement of level ~~(V_{t10})~~ of the network voltage ~~(V_{AC})~~ at a first moment of measurement ~~($t1_0$)~~;

- making a second measurement of level ~~(V_{t20})~~ of the network voltage ~~(V_{AC})~~ at a second moment of measurement ~~($t2_0$)~~;

- calculating the value of the derivative of the voltage values measured in function of the first and second moments of measurement ~~($t1_0$, $t2_0$)~~, to obtain a value of a proportional network voltage ~~($V_{AC'}$)~~; and

- altering the value of the total voltage ~~(V_T)~~ fed to the motor, proportionally to the value of the proportional network voltage ~~($V_{AC'}$)~~, the total voltage ~~(V_T)~~ being altered in function of the difference between the value of a proportional network voltage ~~($V_{AC'}$)~~ calculated in a present cycle of the network voltage ~~(V_{AC})~~ and the value of the proportional network voltage ~~($V_{AC'}$)~~ calculated in the previous cycle of the network voltage ~~(V_{AC})~~.

2. (currently amended) A method according to claim 1, ~~characterized in that~~ wherein the value of the total voltage ~~(V_T)~~ is altered in function of the difference between the value of the proportional network voltage ~~($V_{AC'}$)~~ calculated in a current semi-cycle of the network voltage ~~(V_{AC})~~ and the value of the proportional network voltage ~~($V_{AC'}$)~~ calculated in the previous semi-cycle of the network voltage ~~(V_{AC})~~.

3. (currently amended) A method according to claim 2, ~~characterized in that~~ wherein the value of the proportional network voltage ~~($V_{AC'}$)~~ is obtained from the equation:

$$V_{AC'} = f\left(\frac{\partial V_0}{\partial t}\right)$$

wherein ∂V_0 is obtained by subtracting the first and second measurements of level ~~(Vt_{10}, Vt_{20})~~, and the value of ∂t is obtained by subtracting the values of the first and second moments of measurement ~~($t1_0$, $t2_0$)~~.

4. (currently amended) A method according to claim 2, ~~characterized in that~~ wherein after the step of obtaining the value of proportional network voltage ~~(V_{AC}^2)~~ one foresees a step of:

- measuring the lag time ~~(t_D)~~ between the occurrence of the measurement of the first moment of measurement ~~($t1_0$)~~ and the occurrence of the measurement of the second moment of measurement ~~($t2_0$)~~;

- comparing the lag time ~~(t_D)~~ with a pre-established time ~~(t_P)~~;

- altering the value of the total voltage ~~(V_T)~~ proportionally to a value of the proportional network voltage ~~(V_{AC}^2)~~, the value of proportional network voltage ~~(V_{AC}^2)~~ being proportional to the lag time ~~(t_D)~~, when the lag time ~~(t_D)~~ is different from a pre-established time ~~(t_P)~~.

5. (currently amended) A method according to claim 4, ~~characterized in that~~ wherein the pre-established time corresponds to the lag time ~~(t_D)~~ of the previous cycle of the network voltage ~~(V_{AC})~~.

6. (currently amended) A method according to claim 5, ~~characterized in that~~ wherein the in the step of altering the total voltage ~~(V_T)~~ the elevation of the total voltage ~~(V_T)~~ if the lag time ~~(t_D)~~ is longer than the pre-established time ~~(t_P)~~ is foreseen.

7. (currently amended) A method according to claim 6, ~~characterized in that~~ wherein in the step of altering the total voltage ~~(V_T)~~ the diminution of the total voltage ~~(V_T)~~ if the lag time ~~(t_D)~~ is shorter than the pre-established time ~~(t_P)~~ is foreseen.

8. (currently amended) A method according to claim 7, ~~characterized in that~~ wherein the value of the total voltage ~~(V_T)~~ corresponds to a difference between the value of the piston voltage ~~(V_P)~~ and the value of the proportional network voltage ~~(V_{AC}^2)~~, the value of the piston voltage ~~(V_P)~~ being previously established.

9. (currently amended) A method according to claim 8, ~~characterized in that~~ wherein the total voltage ~~(V_T)~~ feeds an electric motor of a compressor, the compressor comprising a piston.

10. (currently amended) An electric motor movement controlling method, the electric motor being fed by a total voltage ~~(V_T)~~ proportional to an alternate network voltage ~~(V_{AC})~~, the method ~~being characterized by~~ comprising the steps of:

- measuring the network voltage ~~(V_{AC})~~ at a first moment of measurement ~~($t1_\theta$)~~ and at a first level of the network voltage ~~(V_{M1})~~;
- measuring the network voltage ~~(V_{AC})~~ at a second moment of measurement ~~($t2_\theta$)~~ and at a second level of the network voltage ~~(V_{M2})~~, the first level of the network voltage ~~(V_{M1})~~ and the second level of the network voltage ~~(V_{M2})~~ having different levels of voltage;
- the second moment of measurement ~~($t2_\theta$)~~ being different from the first moment of measurement ~~($t1_\theta$)~~;
- generating a square wave having a transition moment when the second level of voltage ~~(V_{M2})~~ has been reached;
- measuring a lag time ~~(t_D)~~ between the between the occurrence of the first level of the network voltage ~~(V_{M1})~~ at the first moment of measurement ~~($t1_\theta$)~~ and the transition moment at the second moment of measurement ~~($t2_\theta$)~~;
- comparing the lag time ~~(t_D)~~ with a pre-established time ~~(t_P)~~;
- altering the value of the total voltage ~~(V_T)~~ proportionally to the value of the proportional network voltage ~~(V_{AC}')~~.

11. (currently amended) A method according to claim 10, ~~characterized in that~~ wherein the pre-established time ~~(t_P)~~ corresponds to the lag time ~~(t_D)~~ of the previous cycle of a network voltage ~~(V_{AC})~~.

12. (currently amended) A method according to claim 10, ~~characterized in that~~ wherein the pre-established time ~~(t_P)~~ corresponds to a mean of lag times ~~(t_D)~~ of the previous cycles of the network voltage ~~(V_{AC})~~.

13. (currently amended) A method according to claim 11 ~~any one of claims 11 or 12, characterized in that~~ wherein the value of the proportional network voltage ~~(V_{AC}')~~ is proportional to the lag time ~~(t_D)~~.

14. (currently amended) A method according to claim 13, ~~characterized in that~~ wherein in the step of altering the total voltage ~~(V_T)~~, it is foreseen to raise the total voltage ~~(V_T)~~ if the lag time ~~(t_D)~~ is longer than the pre-established time ~~(t_P)~~.

15. (currently amended) A method according to claim 14, ~~characterized in that~~ wherein in the step of altering the total voltage ~~(V_T)~~, it is foreseen to lower the total voltage ~~(V_T)~~ if the lag time ~~(t_D)~~ is shorter than the pre-established time ~~(t_P)~~.

16. (currently amended) A method according to claim 15, ~~characterized in that~~ wherein the value of the total voltage ~~(V_T)~~ corresponds to a difference between the value of a piston voltage ~~(V_P)~~ and the value of the proportional network voltage ~~(V_{AC}')~~, the value of the piston voltage ~~(V_P)~~ being previously established.

17. (currently amended) An electric motor movement controlling system comprising ~~being characterized in that~~:

~~the system comprises~~ an electronic control central ~~(10)~~,

the electric motor is fed by a total voltage ~~(V_T)~~ controlled by the electronic control central ~~(10)~~, the total voltage ~~(V_T)~~ being proportional to an alternate network voltage ~~(V_{AC})~~,

the electronic control central ~~(10)~~ including a voltage detecting circuit ~~(50)~~ that comprises a first voltage detecting circuit ~~(51)~~ that detects a first level of the network voltage ~~(V_{M1})~~ and a second voltage detecting circuit ~~(52)~~ that detects the second level of the network voltage ~~(V_{M2})~~ and

the electronic control central ~~(10)~~ being arranged to measure the first level of the network voltage ~~(V_{M1})~~ at a first moment of measurement ~~($t1_0$)~~ and the second level of the network voltage ~~(V_{M2})~~ at a second moment of measurement ~~(t20)~~,

the second voltage detecting circuit ~~(51)~~ being arranged to signal the passage of

the level of the network voltage ~~(V_{AC})~~ at the second level of voltage ~~(V_{M2})~~ through a voltage comparator ~~(53)~~, the voltage comparator ~~(53)~~ generating a square wave having a transition moment, the lag time ~~(t_D)~~ being measured between the occurrence of the first level of the network voltage ~~(V_{M1})~~ and the transition moment,

the electronic control central ~~(10)~~ being arranged to calculate the value of the values of the network voltage ~~(V_{AC})~~ measured in function of the measurement times ~~($t1_0$, $t2_0$)~~ measured and obtain a value of a proportional network voltage ~~(V_{AC}')~~,

the electronic control central ~~(10)~~ being arranged to alter the value of the total voltage ~~(V_T)~~ to a value of corrected total voltage ~~(V_T')~~, proportionally to the value of a proportional network voltage ~~(V_{AC}')~~.

18. (currently amended) A system according to claim 17, ~~characterized in that~~ <u>wherein</u> the first voltage detecting circuit ~~(51)~~ is adjusted to measure the first level of the network voltage ~~(V_{M1})~~ at the time of the respective passage by a zero level.

19. (currently amended) A system according to claim 18, ~~characterized in that~~ <u>wherein</u> the second voltage detecting circuit ~~(52)~~ is adjusted to measure the second level of the network voltage ~~(V_{M2})~~, the second level of the network voltage ~~(V_{M2})~~ being located between the zero level of the network voltage ~~(V_{AC})~~ and a maximum level of the network voltage ~~(V_{ACM})~~.

20. (currently amended) A system according to claim 19, ~~characterized in that~~ <u>wherein</u> the electronic control central ~~(10)~~ comprises a time counting device that compares the lag time ~~(t_D)~~ with a pre-established time ~~(t_P)~~ and to alter the total voltage ~~(V_T)~~ proportionally to the lag time ~~(t_D)~~.

21. (currently amended) A system according to claim 20, ~~characterized in that~~ <u>wherein</u> the electronic control central ~~(10)~~ is arranged to generate a value of a proportional network voltage ~~(V_{AC}')~~, value of voltage ~~(V_{AC}')~~ being proportional to the value of the lag time ~~(t_D)~~, and the electronic control circuit ~~(10)~~ is arranged to alter the value of the total voltage ~~(V_T)~~ to a value of corrected total voltage ~~(V_T)~~ proportionally to

the value of the proportional network voltage ~~(V_{AC}')~~ when the lag time ~~(t_D)~~ is different from the pre-established time ~~(t_P)~~.

22. (currently amended) A system according to claim 21, ~~characterized in that~~ wherein the electronic control central ~~(10)~~ is arranged to raise the value of the total voltage ~~(V_T)~~ to a value of corrected total voltage ~~(V_T')~~ if the lag time ~~(t_D)~~ is longer than the pre-established time ~~(t_P)~~.

23. (currently amended) A system according to claim 27, ~~characterized in that~~ wherein the electronic control central ~~(10)~~ is arranged to lower the value of the total voltage ~~(V_T)~~ to a value of corrected total voltage ~~(V_T')~~ if the lag time ~~(t_D)~~ is shorter than the pre-established time ~~(t_P)~~.

24. (currently amended) A system according to claim 23, ~~characterized in that~~ wherein the total voltage ~~(V_T)~~ feeds an electric motor of a compressor, the compressor comprising a piston,

the electronic control central ~~(10)~~ comprising a value of defined voltage ~~(V_P)~~, the defined voltage ~~(V_P)~~ being proportional to an error ~~(E_{DP})~~ between a reference displacement position ~~(DP_{REF})~~ and a maximum displacement ~~(DP_{MAX})~~ of the piston,

the reference displacement position ~~(DP_{REF})~~ being proportional to the position of the piston in the compressor, and

the maximum displacement ~~(DP_{MAX})~~ being proportional to a desirable displacement of the piston in the compressor.

25. (currently amended) A system according to claim 24, ~~characterized in that~~ wherein the signal generating circuit ~~(50)~~ comprises a D/A converter.

26. (currently amended) A compressor ~~having a system characterized by~~ comprising: ~~a system such as defined in claims 17 to 25~~

an electronic control central,

the electric motor is fed by a total voltage controlled by the electronic control central, the total voltage being proportional to an alternate network voltage,

the electronic control central including a voltage detecting circuit that comprises a first voltage detecting circuit that detects a first level of the network voltage and a second voltage detecting circuit that detects the second level of the network voltage and

the electronic control central being arranged to measure the first level of the network voltage at a first moment of measurement and the second level of the network voltage at a second moment of measurement,

the second voltage detecting circuit being arranged to signal the passage of the level of the network voltage at the second level of voltage through a voltage comparator, the voltage comparator generating a square wave having a transition moment, the lag time being measured between the occurrence of the first level of the network voltage and the transition moment,

the electronic control central being arranged to calculate the value of the values of the network voltage measured in function of the measurement times measured and obtain a value of a proportional network voltage,

the electronic control central being arranged to alter the value of the total voltage to a value of corrected total voltage, proportionally to the value of a proportional network voltage.